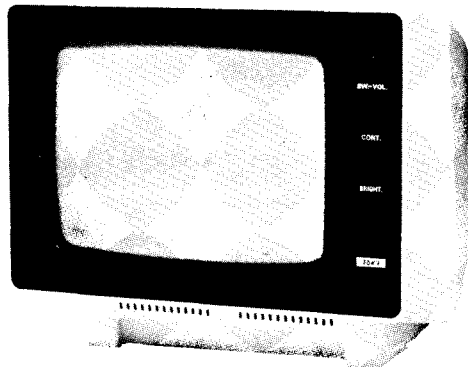


# OPERATION MANUAL

## FOR DISPLAY MONITOR



MODEL KH-90

MODEL KH-90A

Thank you very much for your purchasing TOEI Monitor. Please read this operation manual for your correct operation before switch-on.

- \* I.C. & Transisterized and reliable design can make free Toei Monitors from troubles, and a stabilization of the circuit contributes to make more stable and clear Video-Screen even in the case that variation of power supply-voltage and ambient temperature would occur.
- \* Thoughtful consideration is also given on making easy operation on Model KH-90 Series.  
Vertical IO gradient on front panel keeps operators easy view on the screen and positions of knobs are also considered for easy operation.  
KH-90 Series are employing Green Display CRT which can protect operators' eyes from fatigue of long time-operation, and from reflection of outside light.  
The design is put a importance on users standpoint of operation.
- \* Video input connectors are set up in the rear panel for further giving play to motive power.  
Video output connectors make KH-90 Monitors possible for bridge-operation which make users possible to see same screen of several Monitors simultaneously.
- \* As main circuit is contained in a piece of P.C. Board, and is connected with connectors, maintenance and technical checking are easy to be done.

Picture Tube :

9", 90°, P31, Non-Glare

Power Supply :

AC100, 117, 220, or 240V, 32W

Input Impedance :

High Impedance or 75 Ohm  
changeable by switch

Input Signal :

Composite-Video Signal 1.0~2.0Vp-p

Scanning Frequency :

Horizontal 15.75KHz  $\pm$ 500Hz  
Vertical 50/60Hz

Video Bandwidth :

20MHz and more (+1db -3db)

Numbers of Characters :

2,000 Characters (80×25 lines)

Deflection Tolerance :

Horizontal 7% Vertical 5%

Size of Display :

about 150mm(W) × 108mm(H)

Audio-Input :

0.1Vp-p (KH-90A only)

Audio-output :

0.5W (KH-90A only)

Ambient Condition :

-10°C~+45°C (Temperature)  
20%~80% (Humidity)

Connectors :

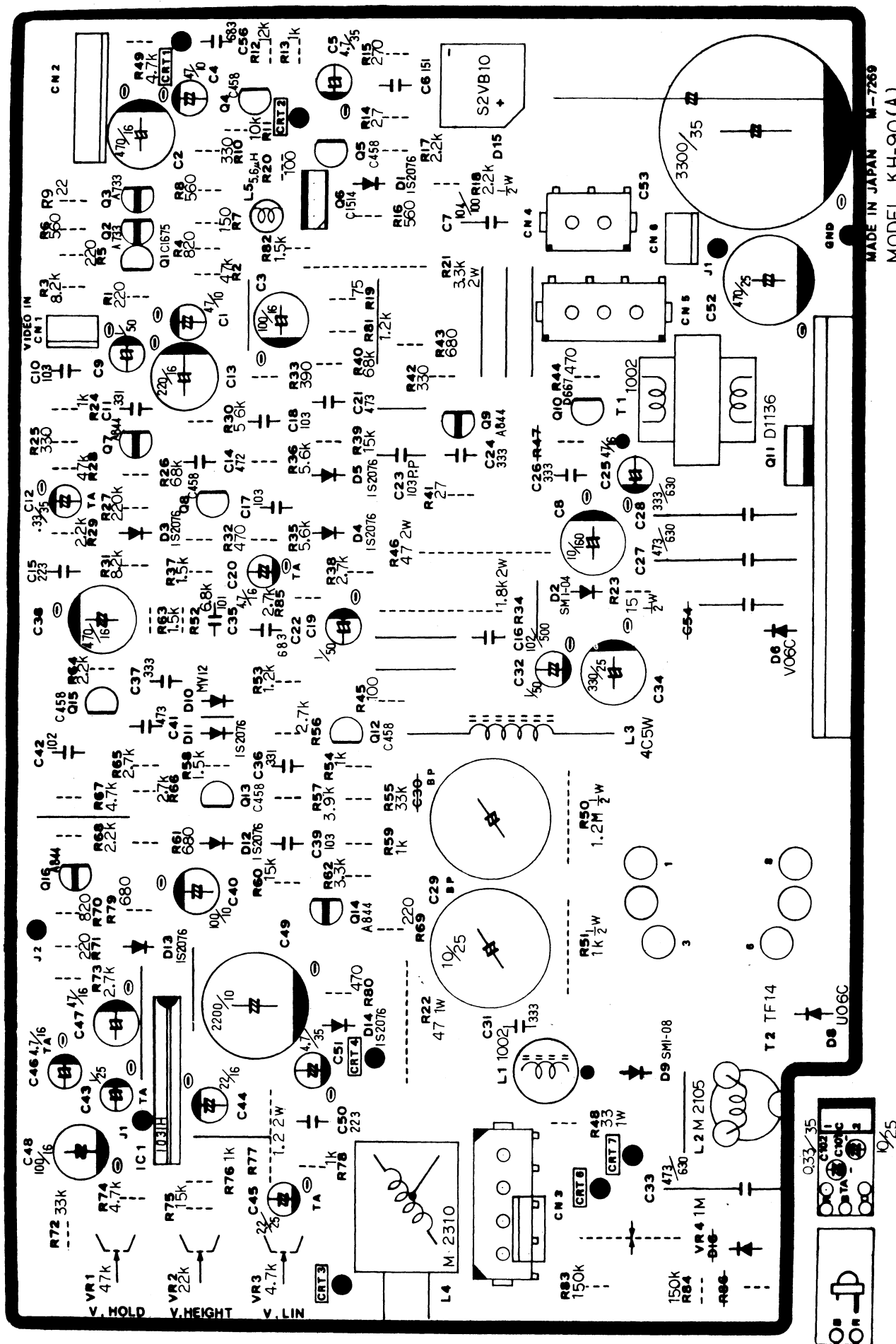
Pinjack × 4 pcs.

Size External :

266mm(W) × 231mm(H) × 275mm(D)

Weight :

4.5Kg net



**MADE IN JAPAN M-7269**

MODEL KH-90(A)

(1) Please use specified components when to change of ★ marked components in the circuit diagram for keep to safety.

(2) Therefore basic circuit diagram is showing, some different may be observed between the circuit diagram and actual wiring due to functional increasing.

(3) Resistor values are in ohms.

(4) Rating of Resistor are in  $\frac{1}{4}$  watt.

(5) Capacitor values are in micro farads.

(6) Working voltage of Capacitors are 50volts.



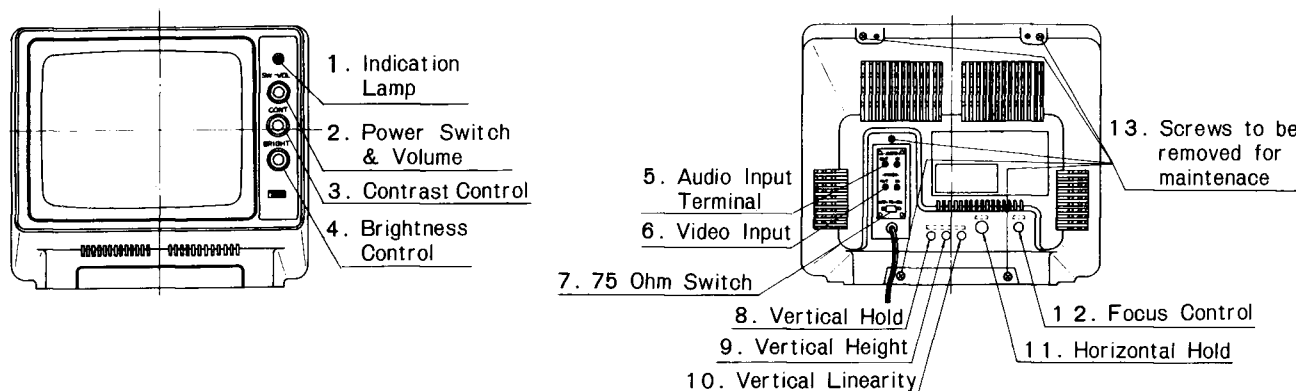
本配線図は基本回路図につき若干異なる場合があります。

☐ 内の数値は、直流電圧値を示します。

VOLUME  
電源スイッチ兼用

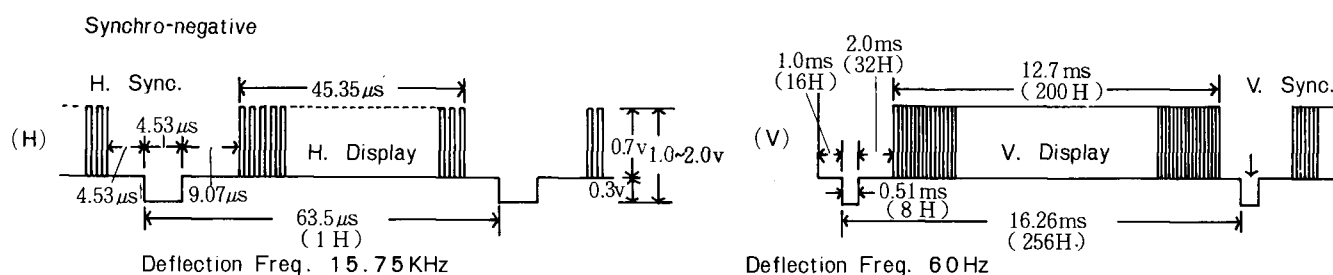
**SPEAKER**

80



1. **Indication Lamp :**  
Green Lamp indicates switch-on when a switch is turn on clockwise.
2. **Power Supply Switch :**  
(1) For Model KH-90 : Switch-on when a switch is turn on clockwise and Switch-off when a switch is turn on counter-clockwise.  
(2) For Model KH-90A : Switch-on of Power Supply and Volume when a swtch is turn on clockwise and sound-volume become further great by turning the knob on clockwise.
3. **Contrast Control :**  
When the picture contrast is too weak or too strong, adjust "CONTRAST" Control.
4. **Brightness Control :**  
Brightness becomes light when the Control-Knob is turn on clockwise, and becomes dark when the Control-Knob is turn on counter-clockwise.
5. **Audio Input Terminal.:**  
This is Terminal for connecting Audio-Signal, and the left Terminal is for Bridge-Connection.
6. **Video Input Terminal :**  
This is Terminal for connecting Video Signal, and the left Termination is for Bridge-Connection.
7. **75 Ohm Termination Control Switch :**  
Switch-on when Video Output Impedance of epuipments connected is 75 Ohm and lower, and Switch-off when the Video Output Impedance is higher than 75 Ohm.
8. **Vertical Hold :**  
When the picture is overlapped or rolling up or dowh, adjust V. HOLD Control until the picture becomes stable with minus screw driver.
9. **Vertical Height Control (adjusted) :**  
Turn on clockwise when vertical amplitude is small and turn on counter-clockwise when vertical amplitude is great.
10. **Vertical Linearity (adjusted) :**  
When the pattern is distorted at the top or bottom portion, adjust V. LINEAR Control.
11. **Horizontal Hold Control :**  
When the picture is off set, or stpikes and bars appear, adjust H. HOLD Control.
12. **Focus Contorol :**  
When the picture is blurred or out of Focus, adjust FOCUS Control.
13. **Maintenace and Technical Checking :**  
Rear-cover can be removed when 5 pcs. of screw and nuts are removed.

#### Recommended Signal and Timing Chart



#### Attention :

- \* Please pay your attention when another signal excepting for recommended signal is input, there are cases that normal Video Display does not appear.
- \* There occurs case that when same characters would be displayed for long hours of time, burned marks would be left on the screen of the CRT.  
Make Contrast Control and/or Brightness down as lower as possible.